1. (AMENDED) An apparatus comprising:

a storage circuit coupled to a prefetcher to store a plurality of prefetch addresses, the plurality of prefetch addresses corresponding to most recent access requests from a processor, the prefetcher generating an access request to a memory when requested by the processor; and

a canceler coupled to the storage circuit and the prefetcher to cancel the access request when the access request corresponds to at least P of the stored prefetch addresses, P being a non-zero integer, the canceler including a gating circuit to disable the access request to the memory when the access request is canceled.

2. The apparatus of claim 1 wherein the storage circuit comprises:

a storage element to store the plurality of prefetch addresses from the most recent access requests by the processor, the storage element being one of a queue with a predetermined size and a content addressable memory (CAM).

3. The apparatus of claim 2 wherein the queue comprises:

a plurality of registers cascaded to shift the prefetch addresses each time the processor generates an access request.

4. The apparatus of claim 3 wherein the canceler comprises:

a matching circuit to match a current prefetch address associated with the access request with the stored prefetch addresses.

5. The apparatus of claim 4 wherein the canceler further comprises:

a cancel generator coupled to the matching circuit to generate a cancellation request to the prefetcher when the current prefetch address matches to the at least P of the stored prefetch addresses.

6. The apparatus of claim 4 wherein the matching circuit comprises:

a plurality of comparators to compare the current prefetch address with each of the stored prefetch addresses.

1   7.   The apparatus of claim 4 wherein the matching circuit comprises:

2   a plurality of comparators to compare the current prefetch address with contents of

3 the plurality of registers, the comparators generating comparison results.

1   8.   The apparatus of claim 7 wherein the cancel generator comprises:

2   a comparator combiner coupled to the comparators to combine the comparison

3 results, the combined comparison results corresponding to the cancellation request.

1   9.   The apparatus of claim 2 wherein the canceler comprises:

2   a matching circuit having an argument register to store the current prefetch address

3 for matching with entries of the CAM.

1   10.   The apparatus of claim 9 wherein the canceler further comprises:

2   a cancellation generator to generate a match indicator when the current prefetch

3 address matches at least P of the entries, the match indicator corresponding to the

4 cancellation request.

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1   11.   (AMENDED) A method comprising:

2   storing a plurality of prefetch addresses in a storage circuit, the plurality of prefetch

3 addresses corresponding to most recent access requests from a processor, the prefetcher

4 generating an access request to a memory when requested by the processor; and

5   canceling the access request when the access request corresponds to at least P of the

6 stored prefetch addresses, P being a non-zero integer; and

7   disabling the access request to the memory by a gating circuit when the access request

8 is canceled.

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1   12.   The method of claim 11 wherein storing comprises:

2   storing the plurality of prefetch addresses in one of a queue with a predetermined size

3 and a content addressable memory (CAM).

1   13.   The method of claim 12 wherein storing the plurality of prefetch addresses in

2 the queue comprises:

3   storing the plurality of prefetch addresses in a plurality of registers cascaded to shift
4   the prefetch addresses each time the processor generates a prefetch request.

1   14.   The method of claim 13 wherein canceling comprises:

2   matching a current prefetch address associated with the access request with the stored

3   prefetch addresses.

1   15.   The method of claim 14 wherein canceling further comprises:

2   generating a cancellation request to the prefetcher when the current prefetch address

3   matches to the at least P of the stored prefetch addresses.

1   16.   The method of claim 14 wherein matching comprises:

2   comparing the current prefetch address with each of the stored prefetch addresses.

1   17.   The method of claim 14 wherein matching comprises:

2   comparing the current prefetch address with contents of the plurality of registers, the

3   comparators generating comparison results.

1   18.   The method of claim 17 wherein generating the cancellation request

2   comprises:

3   combining the comparison results, the combined comparison results corresponding to

4   the cancellation request.

1   19.   The method of claim 12 wherein canceling comprises:

2   storing the current prefetch address in an argument register for matching with entries

3   of the CAM.

1   20.   The method of claim 9 wherein canceling further comprises:

2   generating a match indicator when the current prefetch address matches at least P of

3   the entries, the match indicator corresponding to the cancellation request.

21.   (AMENDED) A system comprising:

a processor to generate prefetch requests;

3   a memory to store data; and

4   a chipset coupled to the processor and the memory, the chipset comprising:

5   a prefetcher to generate an access request to the memory when requested by

6   the processor;

7   a prefetch monitor circuit coupled to the prefetcher, the prefetch monitor

8   circuit comprising:

9   a storage circuit coupled to the prefetcher to store a plurality of

10   prefetch addresses, the plurality of prefetch addresses corresponding to most

11   recent access requests from the processor; and

12   a canceler coupled to the storage circuit and the prefetcher to cancel

13   the access request when the access request corresponds to at least P of the

14   stored prefetch addresses, P being a non-zero integer, the canceler including a

15   gating circuit to disable the access request to the memory when the access

16   request is canceled.

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1   22.   The system of claim 21 wherein the storage circuit comprises:

2   a storage element to store the plurality of prefetch addresses from the most recent

3   access requests by the processor, the storage element being one of a queue with a

4   predetermined size and a content addressable memory (CAM).

1   23.   The system of claim 22 wherein the queue comprises:

2   a plurality of registers cascaded to shift the prefetch addresses each time the processor

3   generates an access request.

1   24.   The system of claim 23 wherein the canceler comprises:

2   a matching circuit to match a current prefetch address associated with the access

3   request with the stored prefetch addresses.

1   25.   The system of claim 24 wherein the canceler further comprises:

2   a cancel generator coupled to the matching circuit to generate a cancellation request

3   to the prefetcher when the current prefetch address matches to the at least P of the stored

4   prefetch addresses.

1   26.   The system of claim 24 wherein the matching circuit comprises:

2   a plurality of comparators to compare the current prefetch address with each of the

3   stored prefetch addresses.

1   27.   The system of claim 24 wherein the matching circuit comprises:

2   a plurality of comparators to compare the current prefetch address with contents of

3   the plurality of registers, the comparators generating comparison results.

1   28.   The system of claim 27 wherein the cancel generator comprises:

2   a comparator combiner coupled to the comparators to combine the comparison

3   results, the combined comparison results corresponding to the cancellation request.

1   29.   The system of claim 22 wherein the canceler comprises:

2   a matching circuit having an argument register to store the current prefetch address

3   for matching with entries of the CAM.

1   30.   The system of claim 29 wherein the canceler further comprises:

2   a cancellation generator to generate a match indicator when the current prefetch

3   address matches at least P of the entries, the match indicator corresponding to the

4   cancellation request.